

Abstract of the Disclosure:

System, method, and computer program product for synchronizing a system for aspirating and/or dispensing of liquid samples that includes a microejection device and a pump, which are connected with one another via tubing, wherein a computer is capable of being loaded with an activatable computer program product for synchronizing operation of the microejection device and the pump. Embodiments are characterized in that the loaded and activated computer program product directs the computer to control and synchronize the system: (a) to actively define a sample volume and dispense the defined sample volume using the microejection device, which is filled with sample liquid; and (b) to track a part of the pump that conveys liquid around a value, dependent on the sample volume, which is defined and is actively dispensed only by the microejection device, to prevent excessive pressure differences in the microejection device, tubing, and pump.

Please replace the paragraph beginning at line 20 on page 4 of the Specification as follows:

This object is achieved according to a first aspect with a ~~computer corresponding to the features set forth in claim 1; according to a second aspect with a system corresponding to the features set forth in claim 4; according to a third aspect with a method corresponding to the features set forth in claim 10, and according to a fourth aspect with a computer program product corresponding to the features set forth in claim 18~~ system, according to a second aspect with a method, and according to a third aspect with a computer program product for synchronizing a system for aspirating and/or dispensing of liquid samples that comprises a microejection device and a pump, which are connected with one another via tubing, wherein this computer is capable of being loaded with an activatable computer program product for synchronizing operation of the microejection device and the pump. The invention is characterized in that the loaded and activated computer program product directs the computer to control and synchronize the system: (a) to actively define a sample volume and dispense the defined sample volume using the microejection device, which is filled with sample liquid; and (b) to track a part of the pump that conveys liquid around a value, dependent on the sample volume, which is defined and is actively dispensed only by the microejection device, to prevent excessive pressure differences in the microejection device, tubing, and pump. Additional and/or refining features arise from the dependent claims.

Please replace the paragraph beginning at line 20 on page 8 of the Specification as follows:

The dispensing of the sample volume preferably occurs in volume-defined partial steps. The special geometric dimensions and physical properties of the microejection pumps used allow reproducible dispensing of liquid samples with a volume of a few nanoliters. The active

displacement of liquid from microejection device 1 causes a slight drop in pressure in tubing 3 and/or 7. Although part of this drop in pressure can possibly be compensated by the use of flexible tubing 3, 7, this drop in pressure is nonetheless not to exceed a maximum value. The amount of this maximum value depends on the individual characteristics of an appropriately constructed pipettor. In a prototype of the applicant, this maximum value was defined at 100 nL of ~~residual or~~ error volume.

Please replace the paragraph beginning at line 10 on page 10 of the Specification as follows:

Merely by temporally varying the driving of microejection device 1 and pump 2, the system can be individually adjusted to the liquid to be pipetted and/or dispensed. If a residual ~~or error~~ volume arises in liquids with a viscosity less than or equal to water through the dispensing of the sample volume and the tracking of the part of the pump which conveys the liquid in partial steps, it has been proven for dispensing and tracking to thus be adjusted to one another in such a way that this residual volume is always borne by the tracking of the part of the pump which conveys liquid, i.e. that a smaller drop in pressure is always generated between pump 2 and microejection device 1. This ~~error or~~ residual volume was determined in practice for a pipettor and should be smaller than 100 nL. In order that residual volumes cannot add up in larger series of dispensed samples and possibly impair the functioning and/or the reproducibility of a pipettor or dispenser, a value corresponding to the residual volume is preferably stored in computer 4 and taken into consideration in a following dispensation of samples.